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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,565	07/17/2003	Jun Koyama	07977-209003 / US3523D1D1	9258
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FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			DUONG, KHANH B	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/620,565

Applicant(s)

KOYAMA ET AL.

Examiner

Khanh B. Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-29 and 35-39 is/are allowed.
- 6) ☒ Claim(s) 10-24 and 30-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 08/996,357.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/30/07 & 5/24/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114.

Applicant's submission filed on March 30, 2007 has been entered.

Accordingly, no claim was amended, canceled or added.

Currently, claims 10-39 remain pending.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on March 30 and May 24, 2007 has been considered by the examiner.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Claims 10, 15, 25, 30 and 35 recite the steps of: *forming a first wiring on a same layer as a source and drain electrode, forming an insulating film over the first wiring, forming a plurality of contact holes in the insulating film; and forming a second wiring over the insulating film, wherein the first wiring is in contact with the second wiring via the plurality of contact holes, and wherein the first wiring extends in parallel with the second wiring.* Thus, it is understood that the second wiring layer is required to be formed above the first wiring layer and the source and drain electrodes. On the other hand, the submitted

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drawings (e.g. Figs. 1A-1C) only show the second wiring layer (e.g. 106) as being formed below the first wiring layer (e.g. 111) and the source and drain electrodes (e.g. 109 and 110). Thus, the claimed limitations must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 16, the claim recites “the insulating film” on line 2. It is unclear if the limitation corresponds to the first or second insulating film.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 10, 12-15, 17-20, 22, 24, 30, 32 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohori et al. (U.S. 5,929,948).

Re claim 10, Ohori et al. (“Ohori”), previously cited by Applicant in IDS, expressly discloses in FIGs. 2A-4 a method of manufacturing a semiconductor device (liquid crystal display) comprising: forming a first wiring 217 on a same layer 212 as a source or drain electrode (36 or 212) over a substrate; forming an insulating film (301 and 221) over the first wiring 217; forming a plurality of contact holes 224 in the insulating film; and forming a second wiring 227 over the insulating film, wherein the first wiring 217 is in contact with the second wiring 227 via the plurality of contact holes 224, and wherein the first wiring 217 extends in parallel with the second wiring 227.

Re claim 12, Ohori discloses the first wiring 217 comprises aluminum [see col. 4, lines 39-64].

Re claim 13, Ohori discloses the insulating film (301 and 221) comprises an interlayer insulating film (silicon dioxide) [see col. 5, lines 11-14 and 25-27].

Re claim 14, Ohori discloses the semiconductor device is at least one of a liquid crystal display device and an electroluminescence display device [see at least Abstract].

Re claim 15, Ohori expressly discloses in FIGs. 2A-4 a method of manufacturing a semiconductor device comprising: forming a gate electrode 206 over a substrate; forming a first insulating film 212 over the gate electrode 206; forming a first wiring 217 on a same layer as a source or drain electrode (36 or 212) over the first insulating film 212; forming a second insulating film (301 and 221) over the first wiring 217; forming a plurality of contact holes 224 in the second insulating film; and forming a second wiring 227 over the second insulating film, wherein the first wiring 217 is in contact with the second wiring 227 via the plurality of contact holes 224, and wherein the first wiring 217 extends in parallel with the second wiring 227.

Re claim 17, see discussion above regarding claim 12.

Re claim 18, Ohori discloses each of the first insulating film 212 and the second insulating film (301 and 221) comprises an interlayer insulating film (silicon dioxide) [see col. 4, lines 8-15; and col. 5, lines 11-14 and 25-27].

Re claim 19, see discussion above regarding claim 14.

Re claim 20, Ohori expressly discloses in FIGs. 2A-4 a method of manufacturing a semiconductor device comprising: forming a first wiring 217 and a third wiring 303 in a “driving circuit” over a substrate; forming an insulating film 221 over the first wiring 217 and the third wiring 303; forming a plurality of contact holes 224 in the insulating film 221; and forming a second wiring 227 in the driving circuit over the insulating film 221, wherein the first wiring 217

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is in contact with the second wiring 227 via the plurality of contact holes 227, wherein the first wiring 217 extends in parallel with the second wiring 227, and wherein the second wiring 227 intersects with the third wiring 303.

Re claim 22, see discussion above regarding claim 12.

Re claim 24, see discussion above regarding claim 14.

Re claim 30, Ohori expressly discloses in FIGs. 2A-4 a method of manufacturing a semiconductor device comprising: forming a first wiring 217 and a third wiring 303 in a "source line driving circuit" over a substrate; forming an insulating film 221 over the first wiring 217 and the third wiring 303; forming a plurality of contact holes 224 in the insulating film 221; and forming a second wiring 227 in the driving circuit over the insulating film 221, wherein the first wiring 217 is in contact with the second wiring 227 via the plurality of contact holes 227, wherein the first wiring 217 extends in parallel with the second wiring 227, and wherein the second wiring 227 intersects with the third wiring 303.

Re claim 32, see discussion above regarding claim 12.

Re claim 34, see discussion above regarding claim 14.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 11, 16, 21 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohori in view of Yamazaki et al. (U.S. 5,899,547).

Re claims 11, 16, 21 and 31, Ohori fails to disclose the insulating film comprises an organic resin film selected from the group consisting of polyimide, polyamide, polyimideamide, and acrylic.

Yamazaki et al. ("Yamazaki") suggests using an insulating film 39 comprising an organic resin such as polyimide to provide a planar surface [see col. 10, lines 36-38].

Since Ohori and Yamazaki are from the same field of endeavor, the purpose disclosed by Yamazaki would have been recognized in the pertinent prior art of Ohori.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Ohori as suggested by Yamazaki in order to form a planar surface.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method disclosed by Ohori as suggested by Yamazaki in order to form a planar surface.

Claims 23 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohori in view of Shimada (U.S. 5,530,573).

Re claims 23 and 33, Ohori disclose the second wiring layer 227 comprises ITO (indium tin oxide) instead of aluminum [see col. 5, lines 37-43].

Shimada teaches that ITO and aluminum are equivalent materials known in the art for forming a wiring electrode [see col. 13, lines 46-49].

Since Ohori and Shimada are from the same field of endeavor, the purpose disclosed by Shimada would have been recognized in the pertinent prior art of Ohori.

Therefore, because these techniques were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute ITO for aluminum.

Allowable Subject Matter

Claims 25-29 and 35-39 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: none of the prior art of record, taken alone or in combination, fairly shows or suggests all the limitations as recited in the claims.

Re claim 25, none of the prior art of record discloses the following limitations in combination with the rest of the limitations in the claims: forming a second wiring in the driving circuit on a same layer as a source or drain electrode over the insulating film, wherein the first wiring is in contact with the second wiring via the plurality of contact holes, wherein the first wiring extends in parallel with the second wiring, and wherein the second wiring intersects with the third wiring.

Re claim 35, none of the prior art of record discloses the following limitations in combination with the rest of the limitations in the claims: forming a second wiring in the source line driving circuit on a same layer as a source or drain electrode over the insulating film, wherein the first wiring is in contact with the second wiring via the plurality of contact holes, wherein the first wiring extends in parallel with the second wiring, and wherein the second wiring intersects with the third wiring.

Conclusion

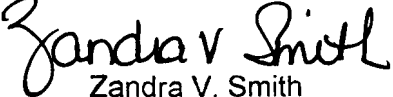
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh B. Duong whose telephone number is (571) 272-1836. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on (571) 272-2429. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KBD


Zandra V. Smith
Supervisory Patent Examiner
25 June 2007